

WHAT IS CLAIMED IS:

1. For use with a packet transport system having a master
2 device that transmits packets to a slave device, a messaging system
3 for facilitating communications between said master device and said
4 slave device, comprising:

5 a channel level detector that reads a level of a first-in,
6 first-out (FIFO) buffer of said slave device and compares said
7 level to a threshold; and

8 an event driven message generator that issues an event driven
9 message to said master device when said level reaches said
10 threshold.

2. The messaging system as recited in Claim 1 wherein said
event driven message is transmitted in band.

3. The messaging system as recited in Claim 1 wherein said
2 event driven message is transmitted out of band.

4. The messaging system as recited in Claim 1 wherein said
2 event driven message is transmitted across a local interface
3 between said master device and said slave device.

5. The messaging system as recited in Claim 1 wherein said
2 threshold is user selectable.

6. The messaging system as recited in Claim 1 wherein said
2 level indicates a number of packets remaining in said FIFO buffer,
3 said event driven message indicating to said master device as to
4 when said FIFO buffer may underrun.

7. The messaging system as recited in Claim 1 wherein said
2 master device transmits additional packets to said slave device
3 based on said event driven message.

8. The messaging system as recited in Claim 1 wherein said
2 level indicates a number of packets remaining in said FIFO buffer,
3 said event driven message indicating to said master device as to
4 when said FIFO buffer may overrun.

9. The messaging system as recited in Claim 1 wherein said
2 master device suspends transmission of packets to said slave device
3 based on said event driven message.

10. For use with a packet transport system having a master
2 device that transmits packets to a slave device, a method for
3 facilitating communications between said master device and said
4 slave device, comprising:

5 reading a level of a first-in, first-out (FIFO) buffer of said
6 slave device;

7 comparing said level to a threshold; and

8 issuing an event driven message to said master device when
9 said level reaches said threshold.

11. The method as recited in Claim 10 wherein said issuing
2 comprises transmitting said event driven message in band.

12. The method as recited in Claim 10 wherein said issuing
2 comprises transmitting said event driven message out of band.

13. The method as recited in Claim 10 wherein said issuing
2 comprises transmitting said event driven message across a local
3 interface between said master device and said slave device.

14. The method as recited in Claim 10 further comprising
2 selecting said threshold.

15. The method as recited in Claim 10 wherein said level
2 indicates a number of packets remaining in said FIFO buffer, said
3 event driven message indicating to said master device as to when
4 said FIFO buffer may underrun.

16. The method as recited in Claim 10 wherein said master
2 device transmits additional packets to said slave device based on
3 said event driven message.

17. The method as recited in Claim 10 wherein said level
2 indicates a number of packets remaining in said FIFO buffer, said
3 event driven message indicating to said master device as to when
4 said FIFO buffer may overrun.

18. The method as recited in Claim 10 wherein said master
2 device suspends transmission of packets to said slave device based
3 on said event driven message.

19. For use with a packet transport system having a master
2 device that transmits packets to a slave device, a messaging system
3 for facilitating communications between said master device and said
4 slave device, comprising:

5 an aggregate level detector that determines storage levels of
6 a plurality of channels associated with said slave device; and

7 a periodic message generator that periodically issues to said
8 master device a periodic message indicating said storage levels.

20. The messaging system as recited in Claim 19 wherein said
2 periodic message is transmitted in band.

21. The messaging system as recited in Claim 19 wherein said
2 periodic message is transmitted out of band.

22. The messaging system as recited in Claim 19 wherein said
2 periodic message is transmitted across a local interface between
3 said master device and said slave device.

23. The messaging system as recited in Claim 19 wherein said
2 periodic message is contained in a single packet.

24. The messaging system as recited in Claim 19 wherein said
2 periodic message enables said master device to determine a
3 variation between a first clock associated with said slave device
4 and a second clock associated with said master device.

25. The messaging system as recited in Claim 19 wherein said
2 master device transmits additional packets to said slave device
3 based on said periodic message.

26. For use with a packet transport system having a master
2 device that transmits packets to a slave device, a method for
3 facilitating communications between said master device and said
4 slave device, comprising:

5 determining storage levels of a plurality of channels
6 associated with said slave device; and

7 periodically issuing to said master device a periodic message
8 indicating said storage levels.

27. The method as recited in Claim 26 wherein said
2 periodically issuing comprises transmitting said periodic message
3 in band.

28. The method as recited in Claim 26 wherein said
2 periodically issuing comprises transmitting said periodic message
3 out of band.

29. The method as recited in Claim 26 wherein said
2 periodically issuing comprises transmitting said periodic message
3 across a local interface between said master device and said slave
4 device.

30. The method as recited in Claim 26 wherein said periodic
2 message is contained in a single packet.

31. The method as recited in Claim 26 wherein said periodic
2 message enables said master device to determine a variation between
3 a first clock associated with said slave device and a second clock
4 associated with said master device.

32. The method as recited in Claim 26 wherein said master
2 device transmits additional packets to said slave device based on
3 said periodic message.

33. For use with a packet transport system having a master
2 device that transmits packets to a slave device, a messaging system
3 for facilitating communications between said master device and said
4 slave device, comprising:

5 an event driven messaging subsystem, including:

6 a channel level detector that reads a level of a first-
7 in, first-out (FIFO) buffer of said slave device and compares
8 said level to a threshold, and

9 an event driven message generator that issues an event
10 driven message to said master device when said level reaches
11 said threshold; and

12 a periodic messaging subsystem, including:

13 an aggregate level detector that determines storage
14 levels of a plurality of channels associated with said slave
15 device, and

16 a periodic message generator that periodically issues to
17 said master device a periodic message indicating said storage
18 levels, said master device controlling transmission of packets
19 to said slave device based on at least one of said event
20 driven message and said periodic message.

34. The messaging system as recited in Claim 33 wherein at
2 least one of said event driven message and said periodic message is
3 transmitted in band.

35. The messaging system as recited in Claim 33 wherein at
2 least one of said event driven message and said periodic message is
3 transmitted out of band.

36. The messaging system as recited in Claim 33 wherein at
2 least one of said event driven message and said periodic message is
3 transmitted across a local interface between said master device and
4 said slave device.

37. The messaging system as recited in Claim 33 wherein said
2 master device transmits additional packets to said slave device
3 based on at least one of said event driven message and said
4 periodic message.

38. The messaging system as recited in Claim 33 wherein said
2 master device suspends transmission of packets to said slave device
3 based on at least one of said event driven message and said
4 periodic message.

39. The messaging system as recited in Claim 33 wherein said
2 periodic message is contained in a single packet.

40. The messaging system as recited in Claim 33 wherein said
2 periodic message enables said master device to determine a
3 variation between a first clock associated with said slave device
4 and a second clock associated with said master device.

41. For use with a packet transport system having a master
2 device that transmits packets to a slave device, a method for
3 facilitating communications between said master device and said
4 slave device, comprising:

5 generating an event driven message, including:

6 reading a level of a first-in, first-out (FIFO) buffer
7 associated with a channel of said slave device,

8 comparing said level to a threshold, and

9 issuing an event driven message to said master device
10 when said level reaches said threshold; and

11 alternatively generating a periodic message, including:

12 determining storage levels of a plurality of channels
13 associated with said slave device, and

14 periodically issuing to said master device a periodic
15 message indicating said storage levels, said master device
16 controlling transmission of packets to said slave device based
17 on at least one of said event driven message and said periodic
18 message.

42. The method as recited in Claim 41 wherein said issuing
2 comprises transmitting said event driven message in band.

43. The method as recited in Claim 41 wherein said
2 periodically issuing comprises transmitting said periodic message
3 in band.

44. The method as recited in Claim 41 wherein said issuing
2 comprises transmitting said event driven message out of band.

45. The method as recited in Claim 41 wherein said
2 periodically issuing comprises transmitting said periodic message
3 out of band.

46. The method as recited in Claim 41 wherein at least one of
2 said event driven message and said periodic message is transmitted
3 across a local interface between said master device and said slave
4 device.

47. The method as recited in Claim 41 wherein said master
2 device transmits additional packets to said slave device based on
3 at least one of said event driven message and said periodic
4 message.

48. The method as recited in Claim 41 wherein master device
2 suspends transmission of packets to said slave device based on at
3 least one of said event driven message and said periodic message.

49. The method as recited in Claim 41 wherein said periodic
2 message is contained in a single packet.

50. The method as recited in Claim 41 wherein said periodic
2 message enables said master device to determine a variation between
3 a first clock associated with said slave device and a second clock
4 associated with said master device.